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REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Claims 6, 11, 18, 24 and 25 have been canceled.

Claims 1, 2, 4, 5, 7, 8, 10, 13, 16, 17, 19, 21, 26 and 27 have been amended. Support for the amendments to the claims can be found in the specification on page 4, lines 18-28; page 5, lines 13-21; page 8, line 13 through page 9, line 20; page 10, lines 27-29 and Figs. 2-5.

Claims 28-30 have been added.

No new matter has been added.

Drawings

The Examiner has rejected the drawings filed on June 13, 2002 under 37 CFR 1.121(a)(6) as introducing new matter.

Applicants continue to disagree with the Examiner. However, in order to better place the case in a condition for allowance, and decrease the number of pending issues, applicants are submitting herewith a revised Fig. 2 showing the cancellation of any previously added heater and optionally heater elements. In the marked up version, the deleted portions are highlighted in yellow and encircled in red. A clean version of the amended informal drawing of Fig. 2 is attached hereto for the Examiner's review. Upon receipt, a formal drawing will be submitted to the draftsman.

The Examiner has also been objected to the drawings under 37 CFR 1.83(a) stating that every feature of the invention specified in the claims must be shown in the drawings or the feature canceled from the claim. Accordingly, in order to better place the case in a condition for allowance, and decrease the number of pending issues, applicants have canceled claim 11. It is submitted that applicants have now overcome the objections to the drawings.

No new matter has been added.

Claim Objections

The Examiner has objected to claim 2 due to informalities. Applicants have amended claim 2 by inserting after "having" in line 3 - -said - -. It is respectfully submitted that applicants have overcome the Examiner's objections to claim 2.

No new matter has been added.

35 USC 112 Claim Rejections

The Examiner has rejected claims 1-21 under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicants have amended claims 1, 13, 26 and 27 to clarify that the throat region has a first and a second aperture adjacent to its first and second

ends for injecting, respectively, a first and a second chemical vapor deposition dopant or precursor into the throat region to allow for atomization of the first and second chemical vapor deposition dopant or precursor by the carrier fluid and mixing thereof. As supported by the specification, and depicted in Fig. 2, the throat region 44 may have introduced therein a liquid 1 and liquid 2 through inlet ports 46 and 48, respectively. Specification at page 8, line 26 to page 9, line 8. Further, the throat region may also include a third aperture for injecting a third dopant into the throat region, such as throat region 44 having three injector tubes as depicted in Fig. 6. Specification, page 8, line 27 and page 10, line 24-26.

In view of the amendments to claims 1, 13, 26 and 27, it is now submitted that claims 1-21 overcome the rejections under 35 USC 112, first paragraph, such that the claims are now in a condition for allowance.

No new matter has been added.

35 USC 102 Claim Rejections

The Examiner maintains the rejection of claims 1, 3-10, 13, 15-21 under 35 USC 102(b) as being anticipated by Gwyn (U.S. Patent No. 4,397,422). Applicants continue to disagree.

Applicants have amended independent claims 1 and 13 and added new independent claim 28 to clarify that which applicants regard as the invention. In particular, the claims are directed to an apparatus for delivering a plurality of chemical vapor deposition fluids to a chamber comprising a chemical vapor

deposition chamber. The chemical vapor deposition (CVD) chamber includes an inlet nozzle, a throat region and an exit nozzle. The inlet nozzle has a first diameter for receiving a carrier fluid, a pressure and a first temperature. The inlet nozzle is connected to a first end of the throat region, while the exit nozzle is connected to the second end of the throat region. The throat region has a second diameter that is less than the first diameter, a second pressure lower than the first pressure and a second temperature. It is adapted to receive a carrier fluid from the inlet nozzle. The throat region also has a first aperture adjacent its first end for injecting a first CVD dopant and a second aperture adjacent its second end for injecting a second CVD dopant therein the throat region. This allows for atomization of the first and second CVD dopants by the carrier fluid and mixing of the atomized CVD dopants with the carrier fluid within the throat region.

The exit nozzle, connect to the throat region at the second end, has an exit pressure lower than the second pressure. The exit nozzle is configured to introduce the mixture of atomized first and second CVD dopants with the carrier fluid within the CVD chamber. In so doing, this exit nozzle may have a third diameter greater than the second diameter to allow for a substantial decrease in pressure from the first pressure to the exit pressure (claim 1), or alternatively, it may only have the same dimension as the throat region. That is, the exit nozzle may have a constant dimension that is equal to the dimension of the throat region, such that the exit nozzle is an extension of the throat region thereby maintaining the second pressure and temperature for the atomized CVD

dopants/precursors and the carrier fluid for introduction of the same into the CVD chamber.

As recited in amended claim 13, the carrier fluid comprises a process compatible gas including O₂, N₂, and He, while the first and second CVD fluids may also be precursors. Further, as clarified in newly added independent claim 28, the cavity may be a cross-flow injector.

Applicants submit that the present invention is not anticipated by Gwyn. Anticipation is but the ultimate or epitome of obviousness. To constitute anticipation, all material elements of a claim must be found in one prior art source. *In re Marshall*, 577 F.2d 301, 198 USPQ 344 (CCPA 1978).

The Examiner states that Gwyn discloses an apparatus comprising an inlet 17, a throat region 19, at least a first aperture for white colorant, at least a second aperture 20 for green colorant, at least a third aperture 20 for red colorant and an exit nozzle 15. The Examiner further states that since the term "dopant" in claims 24 and 25 is not further limited, the Examiner has considered the paints or dyes of Gwyn to be dopants.

It is respectfully submitted that "claim language is not to be interpreted in a vacuum but is to be read in light of the specification to determine the meaning intended by the inventors." *Rohm & Haas, Co. v. Dawson Chemical Co., Inc.*, 557 F. Supp. 739, 217 USPQ 515, 573 (Tex. 1983), citing *San/Bar Corp. v. International Tel. & Tel. Corp.*, 187 USPQ 67, 77 (M.D. Fla.1975). Applicants submit that the Examiner's broad interpretation of the term "dopant" is flawed as the technical meaning of the term dopant is well established as an impurity

added in small amounts to a pure substance to alter its properties, such as, for use in transistors, diodes and semiconductors. In view of the present specification, it is clear that the meaning of the term dopant intended by the inventors, i.e., for the deposition of reactants and other dopants within a chemical vapor deposition chamber, is within the common meaning of the term. Applicants did not intend for the term dopant to include dyes or paints, nor would one skilled in the art commonly interpret the term dopant to include dyes or paints as neither are reactants that alter the properties of a pure substance.

Applicants continue to submit that the Gwyn patent is merely directed to a paint-spraying device for mixing and spraying different colorants utilizing a venturi mixer system. Gwyn only discloses a colorant mixing and spraying device (10) that includes a venturi mixer (18) having an inlet chamber (17), a throat region (19) and an outlet chamber (21). Three tubes (20) are connected to the throat region (19) whereby colorant is suctioned into the throat region from different containers (22) by the flow rate of air flowing from the inlet chamber (17) into the throat region (19). The colorants are mixed together in the venturi throat (19). The mixed colorant then flows from chamber (21) through a hose (26) to a spray gun (28) at a pressure high enough to vaporize the paint. (Fig. 1 and col. 2, lines 18-49.)

Applicants have amended independent claims 1 and 13, and added new independent claim 28, to clarify that which is regarded as the invention by positively claiming that the apparatus is a chemical vapor deposition chamber. This chemical vapor deposition (CVD) chamber has a cavity, preferably a cross-

flow injector, that includes an inlet nozzle, a throat region and an exit nozzle for atomization of first and second CVD dopants/precursors within the throat region and mixing of these atomized dopants/precursors with a carrier fluid therein for delivery within the CVD chamber. The Gwyn patent does not disclose or teach an apparatus for delivering CVD fluids to a CVD chamber having a cavity, preferably a cross-flow injector, whereby the cavity includes inlet and exit nozzles with a throat region there-between as recited in independent claims 1, 13 and 28. Gwyn is limited to a paint-spraying device for mixing and spraying different colorants utilizing a venturi mixer system. (Fig. 1 and col. 2, lines 18-49.) A spray gun (28) is adapted to receive the mixed colorants of the Gwyn patent, whereas a CVD chamber is adapted to receive atomized CVD dopants/precursors mixed with a carrier fluid in the present invention.

Further, it is critical to point out that a venturi design has never been used for chemical vapor deposition processing, or made or adapted to receive atomized CVD dopants/precursors, mixing the same with a carrier fluid and then outputting such mixture within the CVD chamber, as disclosed and claimed by applicants. As such, it is respectfully submitted that the claims of the instant invention include limitations not disclosed nor contemplated by Gwyn such that Gwyn does not anticipate nor render obvious the instant invention.

35 USC 103 Claim Rejections

Claims 2, 11, 12, 14 are rejected under 35 USC 103(a) as being unpatentable over Gwyn (U.S. Patent No. 4,397,422). As discussed above,

Gwyn does not anticipate nor render obvious the instant invention due to limitations in the invention, which are not disclosed in Gwyn, because Gwyn does not suggest or contemplate an apparatus comprising a chemical vapor deposition chamber having a cavity including inlet and exit nozzles connected by a throat region for mixing atomized first and second CVD dopants with a carrier fluid.

Again, Gwyn is limited to simple mixing of the colorants within a throat region of a venturi mixer to achieve a final colorant mixture, which, is further mixed in an outlet chamber (21). The colorant mixture is then vaporized by pressure through a hose (26) to a spray gun (28) for painting a surface, preferably "for use in applying camouflage colorants to military vehicles." (Col. 2, lines 18-49 and col. 4, lines 58-60.) Furthermore, Gwyn does not disclose differing temperatures within the inlet chamber, throat region and outlet chamber, nor does it disclose an exit nozzle configured to introduce atomized chemical vapor deposition fluid and carrier fluid in a CVD chamber. Still further, Gwyn does not disclose an exit nozzle having the same diameter as the throat region, as recited in the pending claims.


With respect to claims 2, 12 and 14, the Examiner states that it would have been obvious to one of ordinary skill in the art to alter the inlet and exit nozzle angles for optimization dependent of application criteria. Applicants disagree as Gwyn does not disclose or suggest altering a nozzle angle such that the nozzle is configured to introduce an atomized chemical vapor deposition dopants/precursors and a carrier fluid into a CVD chamber. Moreover, for the

reasons cited above, independent claims 1 and 13 as amended, from which claims 2, 12 and 14 depend, are patentably distinct over the cited prior art of Gwyn, and as such, put their corresponding dependent claims in a condition for allowance.

Applicants submit that claim 11 has been canceled, and as such, the rejection of such claim is now moot.

It is respectfully submitted that the application has now been brought into a condition where allowance of the case is proper. Reconsideration and issuance of a Notice of Allowance are respectfully solicited. Should the Examiner not find the claims to be allowable, Applicants' attorney respectfully requests an interview with the Examiner to clarify any issue and/or to place the case in condition for allowance.

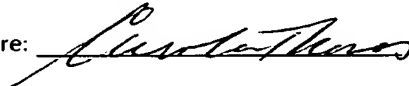
Respectfully submitted,


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